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NEWARI AS A LANGUAGE WITHOUT VOWEL SYSTEMS

A Firthian approach to the Bhaktapur and Kathmandu Newari verb R. K. SPRIGG

If the syllabic and non-syllabic vowels of Newari verb lexical items are examined not in accordance with a phoneme theory but with a more 'chunky' approach, in which each is studied in its syntagmatic setting as part of a 'syllable-final' piece (nasal, vowel, lateral, or stop) and as part of 'syllable-initial' pieces based, firstly, on lip-action differences (y, w, ə) and secondly, on aperture differences (close, medium, open), it becomes impossible to distinguish systems of vowels; and vocalic phonetic features are supplied by the types of piece by which each verb lexical item is classified. This approach seems to be in close agreement with the traditional orthography.

I. INTRODUCTION The first issue of *Nepalese Linguistics* drew attention to non-syllabic vowels ('glides') as an important feature of spoken Newari: 'the status of Glides may be one of the most difficult single questions in the phonological description of Newari' (Kansakar 1980: 9). While discussing this problem Kansakar mentions that Hale had earlier analysed Newari in terms of 'a system of only four contrasting vowels' (1970: 313), later increased to five (Hale and Shresthacharya 1972: 4), before himself deciding in favour of 'six vowel phonemes' (1980: 9). A phonological analysis in accordance with the theory of J. R. Firth, a 'prosodic analysis', is all but certain to differ from these three analyses in that respect, because one of the main principles of this type of analysis is that it is polysystemic, and designed to produce not a single inventory of vowel phonemes but a number of closed systems of vowels, or single vowels, each appropriate to different context or environment.¹ A further characteristic of prosodic analysis is that it is designed to be congruent with other levels of analysis, notably the grammatical; accordingly, my analysis is limited to verbs. As a consequence of this limitation retroflex post-alveolar sounds do not occur in any of my examples, though they would have done so if this analysis had included nouns, e. g. [THu:] dhah [a measure of weight].²

In this study I have analysed the spoken Newari of Bhaktapur in parallel with that of Kathmandu, specifying forms as belonging to the Bhaktapur dialect (B) only where they differ from the Kathmandu, and occasionally, as Kathmandu dialect (K) where they differ from the Bhaktapur. For the Kathmandu dialect it is a pleasure to acknowledge the help that I received from K. L. Manandhar, Research Assistant in Newari at the School of Oriental and African Studies, University of London, during the session 1954-5; for the Bhaktapur dialect I had the good fortune to have S. B. Piwa, of Trichandra College, to work with me in Kathmandu in 1955 and 1956, and to him too I am

duly grateful.

II. 'Nasal-final-piece' verbs

Perhaps the most straight forward introduction to the problem of vowels in Newari verb lexical items is to limit the analysis, to begin with, to the 'nasal-final-piece' type, and resort to the other types of final only when they afford examples of features that happen to be missing from the 'nasal-final-piece' type.

A. Criteria

The 'nasal-final' type has either (1) nasality or (2) nasalization as a final feature of all forms of all verb lexical items (apart from the two grammatical forms of a very few verbs in the Bhaktapur dialect discussed later in this section).

1. NASALITY

Where it is nasality that is the final feature, the nasality is (a) dental in contexts in which a vowel follows (but (b) velar in the last-person present/past form in the Bhaktapur dialect) and (c) velar in velar contexts, in which a velar plosive follows, e. g.

1. a. [ton_ε], tone / twane³
 b. [tona], B [toNa] tona / twana⁴
 c. [toNka], B [toNka] (st) [twaNka] tomka / twamka⁵
 (a) '(I) shall drink', (b) '(I) drink/drank', (c) '(I) make/made drink'.

2. NASALIZATION

The nasalization feature is associated with word-final position, and therefore with (a) imperative forms and (b) 2nd/3rd-person present forms (in -wa), e. g.

2. a. [t(w)ō̃ (:)], B [tō̃ (:)]; [tSū̃ (:)]⁶
 b. [t(w)ō̃ :], B [tō̃ :]; [tSū̃ :] B. [tSī̃ :]
 (a) tom 'drink!'; cyūm B cium 'befriend!';
 (b) tomwa '(he) drinks'; cimwa '(he) befriends'.

FINAL ORALITY

The lexical items of the nasal-final type that were mentioned above as being exceptional in the Bhaktapur dialect have an oral articulation in the final, presumably developed from an earlier (i) nasalization or (ii) nasality, in (i) the last-person future form and (ii) the 3rd - person past form, e. g.

- i. [tSe] ciye 'shall befriend', [je] iye 'shall distribute';
 ii. [tSĩta] cĩta 'befriended', [ʔIta] it̃a 'distributed'.⁷

They belong to a prosodic class distinguished as 'y' and as 'close' in sections (B.1)

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and (C.1) below. Apart from these two forms verbs such as these conform to the criterion stated above, e. g.

1. a. [tSini] cinii '(he) will make friends'
- b. [INa] ina '(I) distribute/distributed'
- c. [INKo] imku '(he) makes distribute'

2. [tSi:] cim '(he) makes friends';
there is, therefore, no difficulty in treating them as a slightly aberrant sub-category of 'nasal-final'.

In a phonological analysis limited to the nasal-final type of verb lexical item five syllabic vowel units need to be distinguished, e. g. (the examples are of the 1st-person present/past form, in phonetic transcription: [the vowel in question is in the first syllable])

- i. [tSina], B [tSINa] cina 'befriend'
- ii. [S₂na], B [S₂Na] sena / syana 'teach'
- iii. [kUna], B (kUNa) kuna 'imprison'
- iv. [tona], B [toNa] tona / twana 'drink'
- v. [gona], B [gaNa] gana 'prohibit'.⁸

These examples of the five phonologically distinct syllabic-vowel units also serve as examples of one of the principles of prosodic analysis already referred, the syntagmatic principle, which requires the phonetic context to be taken into account. In their case the context comprises the syllabic vowel of the verb and its following (lexical-item - final) consonant, in complementary distribution with the nasalization exemplified at (2) above (apart from the exceptions in the Bhaktapur dialect in which orality is the final feature), and extending to initial features of a following lexical item, which is, in these examples, the verbal-particle lexical item -a. This type of 'piece', extending, here, over part of two syllables, contrasts with three other types, the 'vowel-final' (III), the 'lateral-final' (IV), and the 'stop-final' (distinguished in Joshi 1076 N. S. by -ne versus -ye, -le, and -te, e. g. (tusutusu) wane v. (teja) laye, tule, and sote; p. 114) but before passing to those types there are other features of nasal-final verbs to be considered: 'syllable-initial-piece' features (B.-C.). the 'syllable-initial-piece' is taken to comprise the syllabic vowel and whatever consonant and non-syllabic-vowel sounds can precede it within the syllable.

B. 'Syllable-initial piece' and lip - action system

The justification for distinguishing this type of syllable-initial piece is that certain syllable-initial consonant and non-syllabic-vowel sounds, and sequences of both these types of sounds will combine with certain of the syllabic vowel sounds but not with others, and vice versa. The syllable-initial [tS]

of example (i) above, for example, combines with the syllabic vowel [i] B [I] in that example, and will also combine with [s], but not with [U], [o] or [ɔ] B [a]; and the same is true of the initial [S], as in example (ii) (but for these two initials in combination with [a] in the 'vowel-final piece' see (III. B) below); and syllable-initial [k] combines with [U], as in example (iii), and will combine with [ɔ] B [a]; but not with [i] or [s]. These and other syllable-initial-piece syntagmatic relations are shown, for the nasal-final type of syllable, in the following table, in which there is a column for each of the five types of vowel sound, with provision for variation by dialect; and each column contains whatever syllable-initial consonant sounds have been observed in my data as combining with vowel shown at the head of the column, together with the appropriate non-syllabic vowel sounds, and sequences of both of these, as they appear in the last-person present/past form (containing the verbal particle -ā):

[-i-]		[-ɔ-] ⁹	
[-I-] (B)	[-ɛ-]	[-U-]	[o-]
[tS-]			[dz(w)-] (B)
[S-]	S-	n-] ¹²	s- (K) ¹¹
[khj-]	[nj-] [kj-]	k- kh- [khw-] (B)	s-] k-] kh-] ¹³
[tH-]	[thj-] [dj-] tHj-	th- d- tH-] [f- (K)	[g-] t-] th-] d-] p-]
[pH-]	[phj-] [bj-]		[fw-] (B) fh-] v-] [v w-] (B)
[H-] [(?)-]	j-	[m-]	m-] l-] [lw-] (B) Hw- H-] ¹⁴ w-] ¹⁵

Table 1. Syntagmatic relations; 'syllable-initial piece'

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From the point of view of syntagmatic relations between syllabic vowels and preceding non-syllabic sounds this table suggests that [i] and [ɛ] should be grouped together in one type of 'syllable-initial piece', and [U] similarly with [o] the result that three types of 'syllable-initial piece' need to be distinguished. To the syllable-initial piece, then, a three-term system can be applied, the terms of which might be named, from their phonetic characteristics, 'spread', 'rounded', and 'natural'; but I have used the more convenient symbols 'y', 'w', and 'ə'. The criteria for distinguishing each of the three terms of this prosodic system are as follows:

1. y

a. Absolute criteria

- | | | |
|----------------------------------|---|---------------|
| i. palato-alveolarity + friction | } | frontness and |
| ii. palatalization + velarity | } | lip-spreading |

[S- khj-] [-i-] B [-I-]

[S- kj-] [-ɛ-], e, g

[Sina, khjina] B [SINa, khjINa]

[Sɛna, kjɛna] B [SɛNa, kjɛNa] (ft [Sāː, kjāː])

Sina, khina; 'wear',¹⁶ 'scatter'; syana, kena/kyana; 'teach', 'show'.

Further syllable-initial features, which combine with one or other of these two types of vowel sound but not with both (in my data, at least), comprise:

iii. palatality-alveolarity + affrication [tS- -i-]

iv. palatality + nasality [nj- -ɛ-]

c. g.

[tSINa] B [tSINa] cina 'befriend'

[njɛna] B [njɛNa] (ft [njāː]) nyana 'hear'.

I assume that it is a matter of chance that one or other type of vowel sound should be absent from these two criteria: this assumption is supported by the fact that syllable-initial-piece combinations such as these occur in lexical items belonging to the lateral-final type of piece, e. g.

[tSɛla, dzɛla]¹⁷ chela/chyala, jela/jyala 'bring into use', 'wear out'

[njila] B [njela] nila B nyala 'twist'.

There are two other criteria of the *y* term: but these, unlike the four criteria stated above, are limited to occurring with the half-open vowel [ɛ];

v. non-syllabic front spread vowel [j-]

vi. palatalization + $\begin{cases} \text{dentality} & [\text{thj-dj tHj-}] \\ \text{labiality} & [\text{phj- bj-}] \\ \text{laterality} & [\text{lj-}], \text{ e. g.} \end{cases}$

[jɛNka] yamka¹⁸

[tHjɛna] B [tHjɛNa] (ft [tHja: ^s]) dhyana⁻

[phjɛna] B [phjɛNa] (ft [phja: ^s]) phyana⁻

[ljɛno] B [ljɛna] (3rd-person past) lyana

'take away with', 'cut', 'untie', 'was left over'.

Partial criteria

The above are absolute criteria: they distinguish the *y* piece from both the *w* and the *ə* types of piece: but there are also two partial criteria. One of these, (vii) glottal plosion alternating with syllable-initial syllabic vowel, serves to distinguish the *y* term from the *ə* but not from the *w* (and, further, this criterion applies only to the closer of the two *y*-piece vowels), e. g. [?ina] B [INa] ina⁻ 'distribute'; the other, (viii) bilabiality, serves to distinguish the *y* piece from the *w* piece but not from the *ə*; and it too occurs only in association with the closer of the two vowel sounds (and, further, only in the 'vowel-final' type of lexical item (III), e. g., [bia], [phina] B [phINa], biya⁻, phina⁻, 'give', 'wear').

2. w

Table I also gives syntagmatic grounds for associating the two types of rounded vowel unit, close and half-close, with each other in the type of syllable-initial piece here termed 'w'. The criteria of the 'w' initial piece are the following:

a. Absolute criteria

i. $\begin{cases} \text{labio-dentality} & \begin{cases} \text{backness +} \\ \text{lip-rounding} \end{cases} \end{cases} + \begin{cases} \text{closeness} \\ \text{half-closeness} \end{cases}$

[f-] [-U- -o-]
[fh- v-] [-o-]; e. g.

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[fUna] (no Bhaktapur cognate) punā 'wear'

[fona] B [foNa] ponā B pwana 'visit without invitation'

[fhona, vona] B [fhoNa, voNa] phona/phwana, bona/bwana 'beg', 'read'.

Two further criteria apply only to the more open of the two types of w-piece vowel, the half-close vowel:

ii. labio-velarization + glottal friction; [Hwo-] B
[Hwa-]¹⁰

e.g. [HwoNka] B [HwaNka] hwamkā 'join' (causative)

A further criterion, also limited to this vowel, and further limited to the Bhaktapur dialect (and possibly also restricted to slow-tempo utterances), is:

iii. apicality + labio-velarization: [two- dzwo-], e.g. B [twoNa, dzwona] twana, jwana, 'drink', 'catch': and, with a difference in vowel sound ([ʌ]) appropriate to the velar-final-piece sub-category (cf. (A. I. c) above), it also applies to causative forms such as [twaNka] twamkā 'make drink' (K [toNka]).

In causative forms in the Bhaktapur dialect labio-velarization also combines with labio-dentality and laterality: [fw- vw- lw-], e.g.

iv. [vwaNka, lwaNka] bwamkā; wanka 'make read' or 'teach', 'have surfeit of' (cf. K[voNka])

In velar-initial syllables labio-velarization applies to both dialects:

v. velarity + labio-velarization: [khwo-] B [khwa-], but examples have to be sought from the vowel-final type of lexical item (iii), e.g.

[khwoja] B [khwaja] khoya/khwaya 'weep'

[gwoja] B [gwaja] goya 'shut',

In the Bhaktapur dialect velarity + labio-velarization commonly combines with the [U] vowel too:

vi. velarity + labio-velarization: [khwU-], e.g.

[khwUNa] khuna 'cook'.

vii. In the Kathmandu dialect labio-velarization does not combine with apical consonants in syllables in which the vowel is half-close; but it may combine with this type of consonant in syllables containing the half-open type, as in imperative forms and 3rd-person forms, perhaps as a slow-tempo alternative, e.g.

[t(w)⁵] (:), two (:), tswa:] tom, to, co, 'drink!' 'take off!' 'rinse!';

[t(w)⁵] (:), two:, tswa:] tomwa, towa, cowa, 'drinks' 'takes off', 'rinses'

(the second and third in each of these two sets of examples is, respectively, 'vowel-final - piece' and 'lateral-final-piece' (III, IV).

b. Partial criteria

viii Lexical items of the lateral-final and the vowel - final types provide a further criterion for the w piece, but shared with the y piece, in the association of an initial glottal plosive (alternating with initial syllabic vowel) with the closer of the two types of vowel: [(?) U-], e. g.

[Ula], [?Una] B [?UNa] ula, una, 'open', 'cremate'

There are several criteria that the w term shares with the ə term as against the y:

ix. alveolarity : [ts- dz- s-], e. g.

[tsona, dzona] B [tsoNa, dzwoNa] cona/cwana, jona/jwana 'stay' (B also 'live'), 'catch'; K [sona] sona 'establish' (the B cognate is 'vowel-final': [swaNa, swA:]).

For examples containing the closer of the two vowels it is necessary to go to the lateral-final and the vowel-final types of piece, e. g.

lateral-final: [tsUla] cula 'grate'

vowel-final: [syia] (st [suja]) suya 'sew'.

x. dentality +nasality : [n-], e. g.

[nuna], B [nuNa] nuna 'swallow'.

xi. velarity : [k- kh- g-], e. g.

[kUna] B [kUNa] kuna 'imprison', and the vowel-final example [khwoja] B [khwaJa] khoya/khwaya 'weep'

3.

a. Absolute criteria

For the ə term, the last term of the three-term lip-action system applicable to the syllable-initial piece only one absolute criterion can be stated:

- i. { labio-velar } K half-open rounded back
 { non-syllabic vowel } B open non-rounded "/front
 [w-] { K [-ɔ-] (centralized)
 { B [-2-], e. g.

[wɔna] (st [wana]) B [waNa] (ft [wa]) wana 'go'

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b. Partial criteria

Bilabiality was stated in section (1) (viii) above as being a criterion shared with the y piece as against the w:

ii. bilabiality [p-], e. g.

[pɔna] B [paNa] (ft [p^s a:]) panā 'prevent'; cf. also the following example drawn from the vowel-final type of lexical item, whence the closer vowel ([ʌ]) in the Bhaktapur form:

[phɔja] B [phaJa] phayā 'take in one's hand'.

Three partial criteria (viii-x) were stated in section (2) as having features common to both the w piece and the ə piece:

iii. alveolarity [ts- dz- s-], e. g.

[sɔna] B [saNa] sanā 'move', to which may be added, from the plosive-final type of lexical item,

[so:ta] B [sa:ta] sahtā (formerly saltā 'call',¹⁹ and, from the vowel-final type,

[dzɔja] jāyā 'graze' (the Bhaktapur cognate is w-piece: [dzwaJa] jwaya).

iv. dentality+nasality: [n-] e. g. (from the vowel-final type) [noja] B [naJa] nayā 'eat'

v. velarity: [k- kh- g-], e. g.

[kɔna] B [kaNa] (ft [k^s a:]) kana 'tell'

[gɔna] B [gaNa] (ft [g^s a:]) gana 'prohibit'.

Phonetic exponents other than criteria.

The remaining type of sound symbolized in table I, glottal friction ([H]), dentality+plosion ([t th d tH]), labiality+nasality ([m mH]), and laterality ([l]), are common to the y, the w, and the ə terms, and do not, therefore, provide criteria for distinguishing the y, w, and ə types of piece, e. g. (3rd-person past)

y: [Hɔnɔ] B [hɪna] hina 'tied round'

w: [HUɔ] B [HUɪa] hula 'wiped away' (vowel-final piece)

ə: [Hɔnɔ] B [Hana] hana 'threaded'.

With these three different types of prosodic piece distinguished one would expect three different vowel systems, a two-term vowel system for the y piece, with [-i-]/[-I-] and [-ɛ-] representing the prosodically comparable units of that type of piece, a two-term system, correspondingly, for the w piece, [-U-] and [-o-], and their variants as given

above, and a single vowel unit for the ə piece, [-ə-] B [-a-/a-]. The two terms of the y-piece vowel system, which have so far been symbolized phonetically, could be given a phonological symbolization, as 'I' and 'E', and the two terms of the w-piece system as 'U' and 'O', while the ə-piece vowel needs no phonological symbol because no vowel units are distinguished in the ə piece, so the symbol ə itself specifies both piece and vowel. In other words, the ə piece implies [-ə](ts[-ʌ-]) for the Kathmandu dialect, and [-a-/a-] for the Bhaktapur dialect.

However, this solution to the problem of vowels in nasal-final verb lexical items does not go far enough; for there are other syntagmatically associated features of the syllable initial to take into account that have the effect of (i) separating the [-i-/I-] vowel from [-ɛ-] vowel and associating it with the [-U-], and (ii) separating the [-o-] vowel from the [-U-] and associating it with the [-ɛ-]. These syntagmatic relations have already been foreshadowed; for the phonetic criteria were stated for y in section (1) above that applied to the half-open vowel but not to the closer vowel, and vice versa; and the same is true of the two w-piece vowels in section (2). These relationships mean that a further prosodic system, based on differences in the degree of openness of the vowel and its associated syllable-initial-consonant and non-syllabic-vowel features is needed.

C. Syllable-initial piece and aperture system

As far as the nasal-final type of lexical item is concerned, only two of the three distinctions in openness, or aperture, apply; so it might seem that these two types of syllable-initial piece should be termed 'close' and 'open'; but this system needs to be applied to lexical items belonging to the vowel-final class (III) and the lateral-final class as well as to the nasal-final; and for those two classes the distinction is threefold, whence the choice of the three terms 'close', 'medium', and 'open', though only the two former can be exemplified from nasal-final lexical items.

The phonetic criteria for distinguishing the 'close' and the 'medium' terms, then, for nasal-final lexical items are the following:

1. 'close' ('c')

glottal plosion, alternating with initial vowel:

[(?)i-] B [(?)I-], [(?)U-], e. g.

[(?)ina] B [IN₁] inã 'distribute'; for an example of this criterion from the w-initial type of piece it is necessary to have recourse to the vowel-final type of lexical item, e. g.

[?Una] B [?UNa] unā 'cremate' 20

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2 'medium' ('m')

No single criterion can be given for the medium syllable-initial piece; and criteria have to be stated separately for the *y*, the *w*, and *ə* types of piece distinguished in section (B) above:

a. *y*

For the *y* medium piece the following two criteria can be stated:

i. non-syllabic front spread vowel: [j-], e. g.

[jɛNka] *yamka* 'take away with';

ii. palatalization { + dentality, labiality
 + laterality

[nj- thj- dj- tHj-phj-bj- lj-], e. g.

[tHjɛna, phjɛna], [ljɔno] (3rd-person past) B [tHjɛNa, phjɛNa] (ft [tHj[̃] a:, phj[̃] a:]) [ljɛna] (3rd-person past), *dhyana*, *phyana*, *lyana* 'cut', 'untie', 'was left over',

b. *w*

For the *w* medium piece the only criterion in my data that can be stated for both Kathmandu and Bhaktapur dialects is:

iii. labio-velarization+glottal friction: [Hw-], e. g.

[Hwona] B [HwaNa] *hona/hwana* 'thread', 'join together'.

A further criterion can be stated for the Bhaktapur dialect, though possibly slow-tempo only:

iv. labio-velarization+apicality: [two- dzwo-], e. g.

[twoNa, dzwoNa] *twana*, *jwana* 'drink', 'catch'.

c. *ə*

The sole medium criterion that can be stated for the *ə* piece is:

v. non-syllabic back rounded vowel: [w-], e. g.

[wona] B [waNa] (ft [w[̃] a:]) *wana* 'go'.

Phonetic exponents other than criteria.

All the remaining initial-consonant sounds are common to both terms, close and medium, and do not, therefore, provide criteria of either, e. g. [tS ts S s nj n kj k th f b m l H].

Combined classification, lip-action and aperture

When the two syllable-initial-piece prosodic systems, lip-action and aperture, are applied jointly to nasal-final verb lexical items, they provide the following five categories of combined terms:

yc				wc			
ym		əm		wm		e. g.	
[(?) ina]	B [INa]			[khUna]	B [khwUNa]		
[phjɛna]	B [phjɛNa]	[gɔna]	B [gaNa]	[tona]	B [t(w)oNa]		

yc: ina; wc: khuna ym: phena/phyana; əm: gana; wm: tona/twana;

'distribute', 'cook', 'untie', 'prohibit', 'drink'.

Table 2: lip-action terms and combined only one syllabic vowel unit is possible for each of these five categories; so one has only to specify which member of each of the two prosodic classes, y, w, or ə and c or m, is appropriate to a given nasal-final lexical item, and the syllabic and non-syllabic vowel sounds follow automatically from this, with due allowance for differences in dialect and in tempo.

iii. 'vowel-final-piece' verbs

A. 'Close' piece and 'medium' piece

The fivefold classification that result from applying the syllable-initial-piece prosodic systems (II.B-C) can be seen equally clearly in verb lexical items belonging to the 'vowel-final' prosodic class; indeed the aperture system (II.C) is an important means of accounting for the vowel harmony that is a prominent feature of 1st-person future forms and 3rd-person present terms in verbs of this prosodic class.

Just as the nasal-final class of verb has nasality or nasalization as a final feature of the root for all forms of the verb (apart from the Bhaktapur forms mentioned as exceptional in (II. A. 2), so the 'vowel-final' prosodic class has orality as a root-final feature of all forms.

For the vowel-final type it is more interesting to illustrate the analysis from the 1st-person future form and the 3rd-person present form. For the nasal-final type of verb the former of these two forms is disyllabic while the latter is monosyllabic, e. g. [Sɛŋɛ] syane '(I) shall teach', [S²ɔ:] B [S²ɔ:] syamwa 'learns'; for the vowel-final type both are monosyllabic, e. g. [bi:] B [bjɛ] biye '(I) shall give', [bju:] biwa 'gives'. if, then, one leaves out of account for the moment the syllable-initial consonant, the final syllabic vowel

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or sequence of non-syllabic and syllabic vowel will be as follows, according to prosodic class, c versus m, and y versus w versus ə:

1st-person future		3rd-person present	
c y: [-i:]	B [-jɛ]	[-ju:]	
w: [-ɥ/wi:]	[-ɥ/wɛ]	[-u:]	
m y: [-jɛ:]		[-jɔ:]	B [-jʌ:]
w: [-ɥ/wɛ:]		[-(w)ɔ:] ²¹	
ə: [-ɛ:]		[-ɔ:]	B [-ʌ:],
e. g.			
c y: [bi:]	B [bjɛ] biye	[bjɔ:]	biwa
w: [vɥi:]	B [vwɛ] buye	[vu:]	buwa
m y: [gɛ:]	geye/gyaye	[gɔ:]	B [gʌ:] gewa/gyawa
w: [gwɛ:]	goye/gwaye	[gwɔ:]	gowa/gwawa
ə: [gɛ:]	gaye	[gɔ:]	B [gʌ:] gawa
gloss			

'give', 'oil', 'exchange', 'shut', ride'.

Table 3: 'vowel-final' piece; lip-action and aperture

All the forms in table 3 are monosyllabic; in this respect the 1st-person future forms among them differ from the corresponding forms of verbs belonging to (i) the nasal-final, (ii) the lateral-final, and (iii) the stop-final types, which are disyllabic, e. g.

- i. [tonɛ] B [t(w)onɛ] tone/twane 'shall drink'
- ii. [folɛ] B [folɛ] pole/pwale 'shall peel'
- iii. [mHitɛ] B [mHɛtɛ] hmite, mhyate 'shall play'²²

In these three forms the stem and the suffix are easy to delimit:

stem: [ton-] B [t(w)on-], [fol-] B [fol-]; [mHit-] B [mHɛt-] (iton- / twan-, and the like);

suffix: [-ɛ]; but [-jɛ] in the p'osive-final type of piece in the Kathmandu dialect.

In the vowel-final piece, on the other hand, it is difficult to delimit the particle lexical item; it is, therefore, preferable simply to state that the syllabic vowel sound concerned ([-i: -ɛ:]), or the sequence of non-syllabic vowel and syllabic vowel, e. g. [-ɥwi:] B [-ɥ/wɛ], [-jɛ:], are the phonetic exponents of the vowel-final piece as a whole, compri-

ring the final part of the verb lexical item and the whole of the particle lexical item, which is entirely vocalic.

This sort of analysis will mean that the [-i:] and the [-jɛ] of, for example, [bi:] B [bjɛ] *biya* 'shall give' can be treated as symbolizing alternative Kathmandu and Bhaktapur phonetic exponents of the same y piece and c piece, taken from the vowel-final-piece verb *bi-* 'give' and verbal-particle lexical item *-(y) e*, with the final vowel of the verb and the vowel of the particle having an unspecified share of the vocalic sounds [-i:] B [-jɛ]. In the same way the vocalic finals of the remaining 1st-person-future examples in table 3, and those of the 3rd-person-present forms too, can be treated as exponents of part of the verb lexical item and the whole of the particle lexical item, with variation, in some cases, for difference in dialect; and the particles *-(y) e* and *-wa* (sometimes also spelt *-u*) take their pronunciation from the type of lip-action piece in which they occur, y, w, or ə and from the type of aperture piece in which they occur c or m, as examples of vowel harmony, with some degree of variation by dialect.

B. 'Open' (o) piece

In section (A) above examples of the vowel-final-piece word were analysed in terms of close and medium (c and m) aperture piece, in parallel with the analysis applied earlier to the nasal-final-piece word (II. C); it is now necessary to illustrate the remaining term of the aperture system, the 'open' (o) term, and, with it, the y, w, and ə terms of the lip-action system again; for the o syllable-initial piece shows threefold phonetic variation according as it is also analysable into y, w, or ə; and, conversely, the phonetic exponents of the y, w and e terms are somewhat different in the o piece from those which have already been stated for them in the m piece and (for the y and w terms) the c piece. These differences will appear if table 1 is compared with table 4 below. In table 4 the range of initial consonant and non-syllabic-vowel appropriate to the oy, ow, and oa types of piece is plotted against their matching vowel sounds; and the type of grammatical form chosen for this display is, again, 1st-person present/past.

y [-a]	w [-a-]	e [-a-]
[tS-	tsw-	ts-]
[tSh-]		
[dZ-		dz-]
[S-	aw-]	[tsH-]??

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nj-	nw-]	
K [nj-]		B [N-]
	B [kw-]	B [k-]
	B [khw-]	kh-]
[g]-		g-]
	[kHw-	kH-]
[tj-		t-]
[thj-	thw-	th-]
[dj-		d-]
		B [tH-]
		[p-]
[phj-]	B [fhw-	ph-]
	B [vw-	b-]
	[lw-	l-]
	[lH	
	[Hw-	H-]
[j-	w-]	

Table 4: Syntagmatic relations

'open' syllable-initial piece

In table 4 the y column contains the same types of initial-consonant sound as have already been stated as exponents of y for the medium (m) piece: alveolopalatal consonants, palatalized velar, dental, and labial consonants, and the front spread non-syllabic vowel, combined with an open front syllabic vowel. The w column contain labiovelarized consonants, alveolar, velar, dental, and labio-dental, and the back rounded non-syllabic vowel, combined with an open back spread syllabic vowel. The labio-velarized velars and labio-velarized [H] have already been associated with the w term of the system in m-piece examples (II. B. 2) for both dialects; and so have the labio-velarized alveolars, dentals, labio-dentals, and laterals, though only for the Bhakta-

pur dialect (II. B. 2 iii-iv); so only the following are new to the w type of syllable-initial piece:

(both dialects)	[nw-]
(Kathmandu)	[tw-, fhw-, vw-, lw-].

For the phonetic exponency of the ə term with regard to the o piece the same types of syllable-initial consonant can stand as were stated for the ə term in relation to the m piece (II. B. 3) with the addition of velarity+nasality ([N-]), confined to the Bhaktapur dialect, e. g. [NaNa] *nyānā* 'bite', for with the Kathmandu cognate has the y- piece initial [ny-] e. g. [nyana]; the type of syllabic vowel sound that these ə-piece initial consonants combine with is the open front ([a]), but more retracted than for the y piece.

The following are examples of the o type of aperture syllable-initial piece, sub-divided into y, w, and ə according to which of the lip-action types of syllable-initial piece they also serve to exemplify, from the 1st-person present/past from:

oy: [jana, Sana] *yānā*, *syānā* 'do' 'kill'

w: [wana, kHwana] *wānā*, *ghwānā* 'throw away', 'push'

ə. [gaLa, lHana] *gayā*, *lhānā* 'pass by', 'bury'

(I have given the Kathmandu forms of these examples; the Bhaktapur forms differ from them only in having velarity ([N]) where the Kathmandu have dentality ([n]).

It is interesting to note that although the oy and ow examples above can be provided to be of the vowel-final type from their 1st-person future forms, e. g. [jA:, wA:] (not * [jane, wanɛ], their 1st-person present/past forms do not have a vocalic junction feature between stem and inflection like the oo-piece example [gala, analysable into (stem) [ga-] and inflection [-a] with [-I-] as an intervocalic junction feature, but nasality ([-n] B [-N-]). As an English-speaker this use of nasality as a junction feature to link stem-final vowel and inflection-initial vowel reminds me of the somewhat similar use of nasality in vowel-vowel junction in English, e. g. an aim, as opposed to vowel-consonant junction, e. g. a name. In Newari this junction use of nasality is not to be identified, except phonetically, with the stem-final nasality (alternating with nasalization) of nasal-final-piece verb lexical items, e. g. [tonɕ] *tone/twane* 'shall drink', [tw^o:] *tomwa* 'drinks' (II. A).

Junction nasality applies to all verb lexical items of types oy and ow, e. g. [jana] B [jaNa] *yānā* 'do', [wana] B [waNa] *wānā* 'throw away'. In this respect they

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...differ from the *oa* type, of which about half (eleven in my data) have nasality as a junction feature, e. g. [lHana] B [lHana] *lhana* 'bury'; for the rest the junction is purely vocalic, e. g.

[ga]a] *gāya* 'pass by from above', as it is for all medium-piece vowel-final verbs too, e. g. [no]a] B [na]a] '(I) eat/ate' *naya*.

To the *c*-piece and *m*-piece examples of vowel-final verbs given in table 3 can now be added examples of the *o*-piece. Table 5 gives the final vowel or the final non-syllabic vowel and vowel sequence of all three aperture terms as they appear in the 1st person future form of the verb:

y	w	ə	
c: [-i:]	-wi:]		
m: [-jɛ:]	-wɛ:]	-ɛ:]	
o: [-jA:]	-wA:]	-A:]	
e. g.			
c: [bi:]	vɥi:]		biye, buye
m: [gɟɛ:]	gwɛ:]	gɛ:]	gyaye, gwaye, gaye
o: [jA:]	kHwA:]	lHA:]	yāye, ghwaye, lhāye

(c) 'give', 'wear'; (m) 'exchange', 'shut', 'ride'; (o) 'do', 'push', 'bury'

Table 5: 'vowel-final' piece; aperture system complete (for the Bhaktapur close-piece alternatives see table 3)

The same prosodic statement can be made for all forms of a vowel-final verb; the following are examples of the 2nd/3rd-person present:

y	w	ə
c: [bju:]	vu:]	
m: [gjo:] B [gja:]	gwɔ:]	go:] B [ga:]
o: [ja:] B [ja:]	kHwa:]	lHa:] B [lHa:]

cy: biwa; cw: buwa; my: gyawa; mw: gwawa; mə:gawa;

oy: yāwa ow: ghwāwa; oc: lhāwa

'gives', 'wears', 'exchanges', 'shuts', 'rides', 'does', 'pushes', 'buries'.

Table 6: 'aperture' and 'lip-action'; 3rd-person present.

Verb lexical items almost always draw their forms from a single 'aperture' type; thus, the following two vowel-final lexical items are exceptional: they have (i) a *m*-piece form for the 1st-person present/past form, but (ii) an *o*-piece form for the 1st-person future and all other forms, e. g. (Kathmandu)

i. m-piece: [tHɔja] dhaya[~] 'say' [kɔja] kaya[~] 'take'

ii. o-piece: [tHA:] dhaye [kA:] kaye.

IV. 'Lateral-final piece'

The same sort of statement as for the vowel-final piece (tables 5-6) to some extent fits the lateral-final type of lexical item, e. g. (Kathmandu)

1st-person future			3rd-person present		
y	w	ə	y	w	ə
c: [Hilɕ	vUlɕ		Hju:	vu:]	
m. [tjɕ lɕ	foɕ	tholɕ	tjo:	fo:	tha:]
o:		[Halɕ			Ha:]

hile, hiwa, bule, buwa; tele, tewa; pole, powa; thale, thawa; hale, hawa. 'exchange', 'oil', 'squeeze', 'peel', 'cut in two', 'shout'.

Table 7: lateral-final piece; lip-action and aperture

The examples in table 7 show that the close and medium types of lateral-final piece example correspond to the nasal-final and vowel-final examples (table 2, tables 5-6) in having the five combined lip-action and aperture categories cy, cw, my, mw, and mē; but the open type differs from the vowel-final examples in being limited to the ə term of the lip-action system.

V. Conclusion

This analysis of Newari, based on the final-piece system ('nasal' (II), 'vowel' (III), 'lateral' (IV), and, though not systematically stated here, 'plosive') and on the two initial-piece systems, lip-action (y, w, ə) and aperture (close, medium, open) disposes of the need to recognize syllabic vowel systems; for, once a verb lexical item has been identified with the appropriate term of each of the three systems, the appropriate syllabic vowel sound (and non-syllabic vowel sound, if any) has also been specified, provided that due allowance is made for some variation in phonetic features according to difference in dialect and in tempo, e. g. n (syllable-final) mē (syllable-initial): [-o-] B [-a-]ft [-[̃]a:], as in the 1st-person present/past form [wɔna] B [waNa] ft ([w[̃]a:]) [wa[̃]na 'go'/'went', and, [-[̃]ɔ:] B [-[̃]a:] as in the 2nd/3rd person present form [wɔ: B [wa:] wamwa 'go'/'goes'. For vowel-final lexical items, especially, this analysis provides an apt means of dealing with the vowel harmony that is such a prominent feature of the language [(w) i:], [(j/w) ɕ:], [(j/wA:) (table 5).

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Finally, my examples appear to me to show that the basis of Newari orthography, especially in the form preferred by S. B. Piwa, is more prosodic than phonemic.

NOTES

¹Cf. Palmer 1970, x-xiv.

²Cf. Nepali dhak 'a measure of weight' (Turner 1931/1980, 263).

There are two entries with initial *t* and *d* that have been classified as verbs (*kriya*) in Joshi 1076 N. S.: *tucituciwaye* and *dambokaye* (102, 13); but it is only *-waye* and *-kaye* that meet the criteria for classification as verbs; so these two entries are not in conflict with my generalization.

I have used the symbol [ʈ] for the phonetic value voiceless retroflex post-alveolar plosive, and [ɦ] for voiced glottal fricative, the 'voiced arytenoidal clear phonation' of Sprigg 1978 (12-15, 16). The preceding sound shares the arytenoidal posture of the glottis with [ɦ]; consequently, the [ʈ] in this example is not breathed but whispered. Further, Newari syllables containing [ɦ] are commonly distinguished by a pitch difference from other syllables: e. g. where the latter have a fall in pitch the former have a rise-fall.

³Although my examples are single words, they have generally been checked, and tape-recorded, in short sentences, e. g. *jim lah tone* 'I shall (just) drink water', *jim thwam tona* 'I drink beer'.

For some words K. L. Manandar and S. B. Piwa preferred different spellings; and in such cases I have given the variants. In particular, K L M. preferred spellings with *e* and *o* where S. B. P. used *ya* and *wa* respectively, perhaps influenced by phonetic differences between the two dialects, e. g. [o] B (st) [wa] in example (c) below. That the variation *o* versus *wa* is of long standing appears from Malla 1980: 'In the Newari portions *o* and *wa*, *na* and *na* are used as interchangeables' (47, where he is referring to Amritananda's usage one hundred and fifty years ago (1831). I have compared the spelling with those given by Joshi 1076 N. S., Tuladhar 1069 N. S., for Bhaktapur, Hashimoto 1977.

⁴I have used [N] to symbolize a voiced velar nasal.

⁵I have distinguished some phonetic forms as slow-tempo (st) and others as fast-tempo (ft).

⁶I have used [ʈʂ] to symbolize a voiceless palato-alveolar affricate.

⁷I have used [ɪ] to symbolize a somewhat centralized front spread vowel, between close and half-close (as in *big* in British English) and [ʔ] glottal plosive

⁸I have used [ʃ] to symbolize a voiceless palato-alveolar fricative, and [ʊ] to symbolize a somewhat centralized back rounded vowel between close and half-close (as in *good* in British English). The vowel sound symbolized by [ɔ] here is centralized, and in a more detailed phonetic transcription, would have a subscript plus sign to symbolize this; it reminds me of the French vowel *homme* (Armstrong 1932, 50-2), the degree of lip-rounding being sufficiently slight for it to be difficult, sometimes, to decide whether [ɔ] or [ʌ] is the more appropriate symbol for it.

⁹In the Kathmandu dialect [-i-] seems to be complementarily distributed in relation to [-I-], the latter being peculiar to velar-plosive-initial syllables, e.g. [khɪna] *khina* 'move'; also, in both dialects [-u-] seems to be complementarily distributed with [-U-], the former being peculiar to nasal-initial syllables, e.g. [nuna] B [nuNa] *nunā* 'swallow'.

¹⁰Some degree of variation in vowel sound from [-o-] has been noted in the Bhaktapur dialect e.g. [-ɔ-] in [fhoNa] *phwana* 'beg', and [-wɔ-] in [HwɔNa] *hwana* 'join together' [vwɔNa] *bwamka* 'make read' 'reach'; possibly the greater latitude enjoyed by the Bhaktapur dialect in this respect is due to its having to distinguish only two lip-rounded units, [ɔ/ɔ/wɔ] versus [U], as against the three in the Kathmandu dialect, [ɔ] versus [U] versus [ɔ].

The open vowel symbolized here as [a] varies in frontness-backness being notably retracted in labio-velar and velar-initial syllables, as well as in labial-nasal-initial syllables, to the point where I have sometimes symbolized it as [ɑ] e.g. [wɔNa] *wana* '(I) went' [kaŋ] *kane* 'shall tell', [maNa] *manā* 'roasted'.

¹¹The initial piece [so-] is supported by [sona] *sona* '(I) established (ed)' in the Kathmandu dialect, cf. also the future form [sonɔ] *sone*, as in *mohanī sone*; but the Bhaktapur cognate [swɔNa] belongs not to the nasal-final but to the vowel-final-prosodic class, as is proved by its 1st-person future form [swɔ:] *swaye* 'shall establish' (not *[sonɔ]) (the symbol [A] here has the value of front spread vowel between half-open and open, for which the corresponding symbol in the International phonetic Alphabet is 'ash'; cf. the vowel sound of *bad* in British English).

¹²I have used the digraph [ny] to symbolize voiced palatal nasal,

¹³I have used [h] to symbolize aspiration, and, therefore, voicelessness and

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breath as features of any non-syllabic vowel ([j] or [w]) following the plosive or affricate.

¹⁴ S. B. Piwa's usage seems to vary between [H] and [h].

¹⁵ The supporting Kathmandu example for initial [w], [wona] wana 'go', has been observed to have a slow-tempo variant [wana].

¹⁶ For the Bhaktapur dialect, also 'gather'; but Joshi 1076 N. S. would require this to be classified as a 'vowel-final' lexical item: 'siye' (258).

¹⁷ I have used [dZ] to symbolize a voiced palato-alveolar affricate [cf. [tS], note 6].

¹⁸ Only the causative forms of this verb appear in my data; but Joshi 1076 N. S. gives 'yane' (220) 'set up a loom', 'take away'.

¹⁹ Hashimoto 1977 gives *sataygu* (120); but *sat-* fails to symbolize the length of vowel.

²⁰ But there is an example that is clearly of the nasal-final type in Joshi 1076 N. S.: 'une (kri.) *gāmsnu, māla ādi unnu*' (16).

²¹ Velar initials are labio-velarized in both dialects, but apical initials only in the Kathmandu, e.g. [two:] towa 'takes off'.

²² In addition to the nasal-final, lateral-final, stop-final, and vowel-final types I had originally included in my analysis a velar-final piece and a velar-cluster final piece, e.g. (1st-person future) [tSi:kjɛ] *ciike* 'shall make move', 'shall shift'; [fUNkjɛ] *pumke* 'shall make wear', 'shall dress' (K only), and possibly a labial-final piece, e.g. [to:pjɛ] *tope* 'shall hide' but decided that the [-pjɛ] type was not stylistically comparable with the rest of the data as being purely literary. After much hesitation I decided that the [-kjɛ] and [-Nkjɛ] forms were not comparable either, but were best treated as causative forms, the [-kjɛ] forms as causatives of vowel-final and lateral-final verbs, and the [-Nkjɛ] forms as causatives of nasal-final verbs.

My main reason for classifying these verbs with root-final [k] and [Nk] as causative is that they have no causative forms of their own, and are obliged to bring an auxiliary verb into use, *bi-*, in order to make a causative, e.g. [tSi:kI bi:] B [tSi:ke bjɛ:] *ciike biye* 'shall make..... shift'.

A further reason is that these forms have an imperative in [-i], e. g. [tSi:ki] *ciiki* 'move (it)!' cf. [tSu (ɜ:)] *ciu* 'move!'; [fUNki] *pumki* 'make wear' cf. [fU:] *pum* 'wear (it)!'.

I also note that there are very few examples of verb with root-final **-k** and **-mk** in Tuladhar 1948 (pp. 50-8) and Joshi 1076 N. S., seven in the former and three in the latter (pp 13, 168, 274).

*³ The supporting example for [tsH-], [tsHaIa], would be possible only in a humorous utterance; for this verb is honorific, and therefore, incompatible with the 1st person: but [tsHa:] *jhawa* 'goes' will serve instead.

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